

Release notes for ENDF/B Development p-004_Be_009
evaluation

ENDF
B-VII.dev

May 4, 2017

- checkr Warnings:

1. A previous error halted parsing of the current section
MAT= 425, MF= 1, MT=451 (1): Parsing stopped

```
ERROR(S) FOUND IN MAT= 425, MF= 1, MT=451
SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      16 TO      33
```

- checkr Errors:

1. A variable is outside the allowed ENDF range
MAT= 425, MF= 1, MT=451 (0): Variable range

```
ERROR(S) FOUND IN MAT= 425, MF= 1, MT=451
MOD =      1 OUT OF RANGE      0 -      0      RECORD NUMBER      16
```

2. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 2
SECTION 3/ 2 NOT IN DIRECTORY      RECORD NUMBER      35
```

3. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 5 (0): Directory (b)

```
ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 5
SECTION 3/ 5 NOT IN DIRECTORY      RECORD NUMBER      50
```

4. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 50 (0): Directory (b)

```
ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 50
SECTION 3/ 50 NOT IN DIRECTORY      RECORD NUMBER      71
```

5. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 51 (0): Directory (b)

```
ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 51
SECTION 3/ 51 NOT IN DIRECTORY      RECORD NUMBER      85
```

6. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 52 (0): Directory (b)

```
ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 52
SECTION 3/ 52 NOT IN DIRECTORY      RECORD NUMBER      97
```

7. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 53 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 53
SECTION 3/ 53 NOT IN DIRECTORY RECORD NUMBER 108

8. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 54 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 54
SECTION 3/ 54 NOT IN DIRECTORY RECORD NUMBER 119

9. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 3, MT= 55 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 55
SECTION 3/ 55 NOT IN DIRECTORY RECORD NUMBER 128

10. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 2 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 2
SECTION 6/ 2 NOT IN DIRECTORY RECORD NUMBER 138

11. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 5 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 5
SECTION 6/ 5 NOT IN DIRECTORY RECORD NUMBER 574

12. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 50 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 50
SECTION 6/ 50 NOT IN DIRECTORY RECORD NUMBER 5739

13. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 51 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 51
SECTION 6/ 51 NOT IN DIRECTORY RECORD NUMBER 5826

14. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 52 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 52
SECTION 6/ 52 NOT IN DIRECTORY RECORD NUMBER 5910

15. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 53 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 53
SECTION 6/ 53 NOT IN DIRECTORY RECORD NUMBER 5975

16. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 54 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 54
SECTION 6/ 54 NOT IN DIRECTORY RECORD NUMBER 6059

17. Missing a section in directory so your directory is messed up. This error will break everything else
MAT= 425, MF= 6, MT= 55 (0): Directory (b)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 55
SECTION 6/ 55 NOT IN DIRECTORY RECORD NUMBER 6133

• **fizcon** Errors:

1. The mass field (AWI) is incorrectly set.
MAT= 425, MF= 1, MT=451 (1): Bad mass

ERROR(S) FOUND IN MAT= 425, MF= 1, MT=451
AWI SHOULD BE SET TO 9.98623E-01

2. Q value is wrong.
MAT= 425, MF= 3, MT= 50 (1): Bad QI

ERROR(S) FOUND IN MAT= 425, MF= 3, MT= 50
QI SHOULD BE SET TO 0.00000E+00

3. All probability distributions should be normalized to 1, this one isn't.
MAT= 425, MF= 6, MT= 5 (1): Bad norm (a)

ERROR(S) FOUND IN MAT= 425, MF= 6, MT= 5
CHECK NORMALIZATION= 1.000626 AT E= 3.5000E+06
CHECK NORMALIZATION= 1.000599 AT E= 4.5000E+07
CHECK NORMALIZATION= 1.000514 AT E= 5.0000E+07
CHECK NORMALIZATION= 1.000587 AT E= 5.5000E+07
... [10 more lines]

• **psyche** Errors:

1. A probability distribution is negative. This is bad.
FILE 6 / SECTION 51 / DISTRIBUTION IS NEGATIVE / FROM -9.9805E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07 (0): Neg. prob.

FILE 6
SECTION 51
DISTRIBUTION IS NEGATIVE
FROM -9.9805E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07

2. A probability distribution is negative. This is bad.
FILE 6 / SECTION 51 / DISTRIBUTION IS NEGATIVE / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.

```

FILE 6
SECTION 51
DISTRIBUTION IS NEGATIVE
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [2 more lines]

```

3. A probability distribution is negative. This is bad.
FILE 6 / SECTION 53 / DISTRIBUTION IS NEGATIVE / FROM -9.9805E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07 (0): Neg. prob.

```

FILE 6
SECTION 53
DISTRIBUTION IS NEGATIVE
FROM -9.9805E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07

```

4. A probability distribution is negative. This is bad.
FILE 6 / SECTION 53 / DISTRIBUTION IS NEGATIVE / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.

```

FILE 6
SECTION 53
DISTRIBUTION IS NEGATIVE
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [2 more lines]

```

5. A probability distribution is negative. This is bad.
FILE 6 / SECTION 54 / DISTRIBUTION IS NEGATIVE / FROM -9.9805E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07 (0): Neg. prob.

```

FILE 6
SECTION 54
DISTRIBUTION IS NEGATIVE
FROM -9.9805E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07

```

6. A probability distribution is negative. This is bad.
FILE 6 / SECTION 54 / DISTRIBUTION IS NEGATIVE / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.

```

FILE 6
SECTION 54
DISTRIBUTION IS NEGATIVE
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [2 more lines]

```

- linear Errors:

1. Negative cross section found
0: Neg. Sig(E)

```

Linearize ENDF/B Cross Sections (LINEAR 2015-1)
-----
Retrieval Criteria----- MAT
Monitor Mode----- Off
Minimum Cross Section----- 1.0000E-10 (Default Option)
... [48 more lines]

```

- fudge-4.0 Errors:

1. The continuum gamma spectra has big normalization trouble
Reading ENDF file: ../p-004_Be_009.endf (Error # 1): Bad gamma spectra

Exception: Zero norm continuum gamma spectrum energies = 4500000.0 (MT=5). Try option '--continuumSpectraFix'

2. Found a negative probability
reaction label 1: n + B9 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

WARNING: Negative probabilities encountered. Incident energy: 7.5e7 eV, worst case: -0.000915730190009
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -34.3646812709
WARNING: Negative probabilities encountered. Incident energy: 1.13e8 eV, worst case: -34.3646812709

3. Found a negative probability
reaction label 2: n + B9_e1 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

WARNING: Negative probabilities encountered. Incident energy: 6.e7 eV, worst case: -0.00032655
WARNING: Negative probabilities encountered. Incident energy: 7.5e7 eV, worst case: -0.000915730190009
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -34.3646812709
WARNING: Negative probabilities encountered. Incident energy: 1.13e8 eV, worst case: -34.3646812709

4. Found a negative probability
reaction label 3: n + B9_e2 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

WARNING: Negative probabilities encountered. Incident energy: 7.5e7 eV, worst case: -0.000915730190009
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -34.3646812709
WARNING: Negative probabilities encountered. Incident energy: 1.13e8 eV, worst case: -34.3646812709

5. Found a negative probability
reaction label 4: n + B9_e3 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

WARNING: Negative probabilities encountered. Incident energy: 6.e7 eV, worst case: -0.00032655
WARNING: Negative probabilities encountered. Incident energy: 7.5e7 eV, worst case: -0.000915730190009
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -34.3646812709
WARNING: Negative probabilities encountered. Incident energy: 1.13e8 eV, worst case: -34.3646812709

6. Found a negative probability
reaction label 5: n + B9_e4 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

WARNING: Negative probabilities encountered. Incident energy: 6.e7 eV, worst case: -0.00032655
WARNING: Negative probabilities encountered. Incident energy: 7.5e7 eV, worst case: -0.000915730190009
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -34.3646812709
WARNING: Negative probabilities encountered. Incident energy: 1.13e8 eV, worst case: -34.3646812709

7. Found a negative probability
reaction label 6: n + B9_e5 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

WARNING: Negative probabilities encountered. Incident energy: 7.5e7 eV, worst case: -0.000915730190009
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -34.3646812709
WARNING: Negative probabilities encountered. Incident energy: 1.13e8 eV, worst case: -34.3646812709